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REMARKS

Claims 1-11 remain pending.

In the Office Action, the Examiner rejected claims 1, 6, 7, and 11 under 35 U.S.C. § 103(a) as being unpatentable over Wang et al. (U.S. Patent No. 6,523,233) in view of Goldstein (U.S. Patent No. 5,265,151); and stated that claims 2-5 and 8-10 would be allowable if rewritten in independent form.

New grounds of rejection do not excuse duty to answer traversals that are still relevant:

Applicants note with disapproval that the pending Office Action is the *third* non-final action containing a 35 U.S.C. § 103(a) rejection over Wang et al., with and without other references. Many of the allegations about Wang et al. are repeated, unchanged, in all three actions. Applicants presented substantive traversals in the past *two* responses with regard to Wang et al. that were not answered, on the pretext that they were moot in view of a new ground of rejection. This is plainly improper under M.P.E.P. § 707.07(f). See M.P.E.P. page 700-120, in the Examiner Note to Form Paragraph 7.38, which has thus far *twice* been ignored, skipped over, or otherwise not followed, and which requires:

“The examiner must, however, address any arguments presented by the applicant which are still relevant to any references being applied.”

Applicants also draw the attention of David Hudpeth and Jean Gelin, who signed the previous and current Office Actions, to this portion of the M.P.E.P., so that they will not sign other Office Actions containing this error.

In view of the above, Applicants *again* respectfully request under M.P.E.P. § 707.07(f) that, to the extent any portions of traversed rejections are repeated, the Examiner answer the substance of the traversals of those portions.

Further, because such answers should have been presented in both the pending Office Action and the previous Office Action mailed August 2, 2004, Applicants request that a new, non-final action be issued that corrects this persistent error by providing the requested answers.

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Claims 1, 6, 7, and 11:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

Applicants respectfully traverse the § 103(a) rejection of claims 1, 6, 7, and 11 over Wang et al. in view of Goldstein. Claim 1 requires a method including, *inter alia*, “preprocessing to minimize effects of impairments other than IMD, to derive best estimates x' of the received values that would correspond to a set of transmit values y ; deriving an IMD based constant I from x' ; and deriv[ing] an IMD removed new estimate x'' in accordance with an equation: $x'' = x' - I (by^3)$.” The combination of Wang et al. and Goldstein fails to teach or suggest the claimed method.

Failure to teach or suggest “deriving an IMD based constant”

Page 2 of the Office Action alleges that the “deriving an IMD based constant I from x'' ” element of claim 1 reads on col. 3, lines 49-51 of Wang et al. This portion of Wang et al. only appears to disclose calculating a digital impairment based on a digital test signal (col. 3, line 31). Col. 3, lines 49-51, of Wang et al. does not teach or suggest “deriving [an] IMD based constant I ” as set forth in claim 1. Nowhere in Wang et al. is inter-modulation distortion (IMD) even mentioned. Thus, Wang et al. cannot logically teach or suggest deriving an “IMD based constant” as claimed.

Nor does Goldstein teach or suggest deriving such an IMD based constant. Rather, the cited col. 2, lines 18-32 of Goldstein discusses adjusting the power of a transmitted signal to reduce the error rate that is a function of both signal-to-noise ratio (SNR) and IMD. Adjusting a power level, however, in no way teaches or suggests “deriving an IMD based constant I from x' ,” as set forth in claim 1. Thus, Goldstein also fails to teach or suggest “deriving IMD based

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constant I from x'' as required by claim 1. Therefore, the combination of Wang et al. and Goldstein does not teach or suggest this required claim element.

Failure to teach or suggest "deriv[ing] a IMD removed new estimate x'' . . ."

Page 2 of the Office Action also alleges that the "deriv[ing] a IMD removed new estimate x'' " in accordance with the equation: $x'' = x' - I (by^3)$ element of claim 1 reads on col. 5, lines 50-55 and 60-61 of Wang et al. This portion of Wang et al. only appears to disclose a set of conditions that produce a common analog impairment G . It cannot reasonably be argued that the equation $z = G * y = G * f(x)$ in col. 5, lines 50-55 and 60-61, of Wang et al. (or the equations in col. 6) teach or suggest the specifically claimed equation " $x'' = x' - I (by^3)$ " set forth in claim 1. For example, Wang et al. does not teach or suggest cubing any particular variable. Hence, Wang et al. fails to teach or suggest the third-quoted "deriv[ing] a IMD removed new estimate x'' " in accordance with the equation: $x'' = x' - I (by^3)$ element of claim 1 above.

The Office Action does not allege that Goldstein teaches or suggests the claimed equation: $x'' = x' - I (by^3)$. Thus, the combination of Wang et al. and Goldstein does not teach or suggest this required claim element and equation.

Failure to teach or suggest "preprocessing to minimize effects of impairments other than IMD"

Page 2 of the Office Action alleges that the "preprocessing . . ." element of claim 1 reads on col. 3, lines 39-46 of Wang et al. This portion of Wang et al. only appears to disclose computing an analog impairment based on a digital test signal. Col. 3, lines 39-46, of Wang et al. does not teach or suggest preprocessing anything to minimize the effects of an impairment; it only teaches *calculating* a type of impairment.

Further, the term "preprocessing" implies the existence of similar, later processing. The cited portion of Wang et al. simply does not teach or suggest "preprocessing" before such later processing as required by claim 1. Hence, Wang et al. fails to teach or suggest the first-quoted "preprocessing . . ." element of claim 1 above.

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The Office Action does not allege that Goldstein teaches or suggests the claimed "preprocessing" claim element. Thus, the combination of Wang et al. and Goldstein does not teach or suggest this required claim element either.

Because, as explained above, the cited portions of Wang et al. fail to teach or suggest any of the three elements of claim 1, a *prima facie* case of obviousness has not been established for independent claim 1.

In any event, no suggestion or motivation to modify or combine teachings

A *prima facie* case of obviousness also has not been established, because there is no suggestion to modify Wang et al. as proposed or to combine its teachings with those of Goldstein.

First, Also, the justification that "modifying constants and/or variables of a known function to achieve an optimum relationship requires routine skill in the art" is legally incorrect and factually inapplicable. None of the various rationales in M.P.E.P. §§ 2144-2144.09 supports this sweeping assertion. If the Examiner cannot produce case law or other material from the M.P.E.P. to support this allegation, it must be withdrawn as a matter of law.

Also, the claimed equation: $x'' = x' - I (by^3)$ is characterized as "a known function" and "an optimum relationship of the variables" on page 3 of the Office Action. This is factually incorrect. Wang et al. discloses a number of equations, for example $z = G * y = G * f(x)$, that are completely different in both structure/form and variables from the specific one that is claimed. This is not, as the Examiner seems to suggest, a case of changing a value (e.g., 1.2 to 2) within the same equation. Rather, it is an improper attempt to fabricate a different equation from whole cloth. This amounts to an assertion that any equation is obvious over any other equation, different form and variables notwithstanding, which is logically and legally incorrect.

One skilled in the art, in possession of Wang et al., would not have been motivated to change any of the equations in the reference to achieve the elements of claim 1. If the Examiner disagrees, she is respectfully requested to provide detailed technical reasoning of how and why one of ordinary skill in the art would have modified any equation in Wang et al. to arrive at the claimed equation: $x'' = x' - I (by^3)$.

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Second, one of ordinary skill in the art would not have been motivated to add the teachings of Goldstein. Contrary to page 3 of the Office Action, Goldstein does not disclose "use" of intermodulation distortion (IMD). Rather, it appears to disclose reduction of an error rate due, in part, to IMD by adjusting transmission power (col. 2, lines 18-32). Also, the proposed justification of modifying Wang et al. "with intermodulation distortion for the purpose of minimizing the instantaneous signal amplitude excursion" is a bare conclusion that is presented without citation to either Wang et al. or Goldstein. In sum, the mere mention of intermodulation distortion (IMD) in Goldstein does not provide motivation to add the several IMD-related claim elements that are missing from Wang et al.

A *prima facie* case of obviousness has not been established for independent claim 1 for these additional reasons.

Claims 6, 7, and 11 are allowable at least by virtue of their dependence from claim 1.

Reconsideration and allowance of pending claims 1-11 is respectfully requested.

In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact Alan Pedersen-Giles, attorney for Applicants, at the number below to discuss such matters.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0221 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Alan Pedersen-Giles
Registration No. 39,996

c/o Intel Americas
LF3
4030 Lafayette Center Drive
Chantilly, VA 20151
(703) 633-1061